

## **VII. PHYSICAL PLANT INVENTORY**

### **FACILITY INVENTORY AND INSPECTION PROGRAM**

Buildings and other structures in state parks are necessary to provide services to park visitors. These structures are essential for protecting public safety, health, and welfare while providing opportunities for outdoor recreation. They include infrastructure, such as roads, parking lots, trails, and systems for potable water, electrical distribution, and sewage treatment. They also include operational and recreational facilities, such as campgrounds, picnic areas, concession buildings, boardwalks, park offices, residences, pump houses, warehouses, barracks, maintenance shops, visitor centers, etc. These facilities must be properly maintained to provide for a safe, continuous, and quality park-use experience.

The structures within Cliffs of the Neuse State Park are generally in good condition, especially considering that most of the structures are from 40 to 50 years old. These structures sit in an environment that includes high levels of moisture and shade, conditions that serve to encourage termite activity and mold growth. Such conditions multiply the need for gutters and regular routine exterior maintenance, including keeping roofs free of pine straw and leaves. A list of the structures currently in use, a description of them, and their repair needs follows.

#### **Cliffs of the Neuse State Park Building Inventory**

- Personnel Barracks: Built in 1965. 1072 square foot (SF) concrete masonry structure. Poor/fair condition. A capital improvement renovation project exists that would bring the structure up to current health & safety standards.
- Pump House Building: Built in 1954. 716 SF concrete masonry structure. Fair condition. Pump has been removed. All water treatment equipment needs to be removed in order to convert the building to storage use.
- Work Shop: Built in 1950. 1300 SF concrete masonry structure. Poor/fair condition. Identified as part of the Maintenance Area Renovation Capital improvement project
- Equipment/Lumber Shed: Built in 1964. 1326 SF. Wood frame structure. Poor/fair condition. Identified as part of the Maintenance Area Renovation Capital improvement project.
- Supply/Storage/Garage Building: Built in 1965. 1621 SF concrete masonry structure. Fair condition. Identified as part of the Maintenance Area Renovation Capital improvement project.
- EADI Office: Built in 1998. 3108 SF Wood frame structure. Good condition. Termite damage recently noticed by Park Staff is undergoing treatment and repair. This building was designed so it could be converted to a park warehouse and storage building once the park visitor center is constructed and Eastern District Staff are relocated to the visitor center.

- CLNE Park Office: Built in 1964. 537 SF wood frame structure. Fair condition. Insufficient space for its current use, and it does not meet Americans with Disabilities Act (ADA) standards.
- Wood Shed: Built in 1993. 80 SF wood frame storage building. Fair condition.
- Campground Wash House/Toilets: Built in 1966. 966 SF concrete masonry structure. Poor condition. Not ADA compliant. Identified for replacement as part of the Tent and Trailer Campground Improvement Project.
- Museum: Built in 1953. 1425 SF masonry and wood framed structure. Fair condition but not ADA compliant. Building is experiencing some differential settlement. A capital improvement project to renovate the building for classroom space exists.
- Picnic Shelter: Built in 1950. 2491 SF. Open post and beam and masonry structure with two fireplaces and a storage room. Fair condition. Trail leading to shelter is not ADA compliant. Needs lighting.
- Swim Beach Bath House: Built in 1998. 2467 SF concrete masonry structure. Good Condition. Wooden steps from parking lot to Bath House are fair. Three sets of steps from the bathhouse to the swim beach are in poor condition.
- Boat House: 860 SF wood frame structure on concrete piles. Built in 1965. Poor condition. Not ADA compliant. Minor renovation to this facility is part of the Lake Safety capital improvement project now under design.
- Ranger I Residence: Built in 1965. 1169 SF wood frame structure. Fair condition. Park Staff has performed some repairs and improvements. Remaining improvements needed are included as part of an existing capital improvement project, Renovation of Three Ranger Residences.
- Garage/Storage Building: Built in 1965. 116 SF wood frame structure on concrete masonry foundation. Fair condition.
- Ranger III Residence: Built in 1952. 938 SF wood frame structure. Fair condition. Park Staff has performed some repairs and improvements. Remaining improvements are identified as part of the existing capital improvement project, Renovation of Three Ranger Residences.
- Smokehouse/Garage: Built in 1952. 126 SF enclosed area with 193 SF open area. Wood frame structure. Poor Condition. Park Superintendent wants to repair/restore the building for storage.
- Pack House/Storage: Built in 1965. 585 SF wood frame structure. Poor condition. Superintendent would like to repair/restore for storage.
- Pump House: Built in 1987. 27SF wood frame structure. No longer needed for well use. Located adjacent to the Crumpler House, it has received approval for demolition. The well will be sealed and the pump house demolished at the same time the Crumpler House is demolished.
- Old Superintendent's Residence: Built in 1959. 1253 SF. Fair condition. Park staff has performed some repairs and improvements. Remaining improvements are identified as part of an existing capital improvement project, Renovation of Three Ranger Residences.
- Storage Building: Built in 1965. 54 SF concrete masonry structure. Fair condition. Formerly used as pump house.

- New Superintendents Residence: Built in 2003. Good condition. 1702 SF Wood frame structure with a detached 660 SF carport with storage.
- Pit Toilets (2): Built in 1960. Two 18 SF wood-frame structures in poor condition. Located in the group camp area. Recently replaced with waterless toilets, both structures are currently scheduled for demolition.
- Group Camp Toilet: This Rom-Tech waterless, pump and haul toilet was installed in 2004 to replace two wood-frame pit toilets, described above, located in the group camp.
- Picnic Area Restroom: Constructed in 2004 and connected to an existing sewer system. New condition.

*(Note: Discrepancies exist regarding dates of construction of some buildings. Facility Inventory and Inspection Program (FIIP) dates have been used in this document. Dates of construction will be checked and revised if necessary during the next FIIP update.)*

## **ROAD AND UTILITY INVENTORY**

### **Background information**

The Institute for Transportation Research and Education (ITRE) conducted a road inventory for Cliff of Neuse State Park in March of 1990. ITRE inventoried the following:

- Paved Road Miles- 1.27 miles
- Unpaved Road Mileage- 0.26 miles
- Paved Parking lots- 18,357 sq. yards

There is also a gravel parking lot at the group camp area. There has been very little change to the park road and parking lot since ITRE conducted the inventory. A new parking area for the East District park office was completed in 1997.

### **Road and Parking Inventory**

#### Description

The road system is comprised of a main park road that is approximately 6/10 of a mile long. Feeder roads run off the main road and connect to the swimming and picnic area, and to the office, maintenance and camping area. All the two lane roads within the park are 19 to 20 feet wide; the camping loop has a width of 12 feet. The paved areas have an 8-inch stone base with asphalt depths ranging from 1-½ inches to three inches, since the roadway has been resurfaced on at least two occasions. The shoulder widths are approximately four feet. Drainage is handled through concrete catch basins that are located at low points along the roadways and parking lots. Most pipe culverts are concrete.

### Current Conditions

The road and parking lots were constructed in 1950s and were last resurfaced in 1996. They are in good condition. Drainage improvements to the road way and to the asphalt parking lots at the museum and swimming areas were made in 2000 and 2002. Striping was done in 2002. Culverts are in good condition.

### Repair Needs and Costs

There are several locations on the office road and a camping road where roots have cracked and damage the asphalt pavement. There are a couple of spots on the main road where tree roots appear to be cracking the asphalt. Removing the tree roots and repairing the damaged asphalt will cost approximately \$15,000. The lower parking lot in the swim/picnic area is in need of striping. The striping will cost \$1,000.

## **Sewer Systems**

### Description

Every building that discharges sewer has its own separate sewer system with a septic tank and nitrification drain lines. There currently are 13 systems in operation. One system will be abandoned later this year, and another at a later date. The current systems are as follows:

- Bathhouse and picnic area restroom system: the bathhouse and picnic area restroom each have a pump station approximately five feet square by eight feet deep. The tank capacity is 1175 gallons with a usable capacity of 587.5 gallons. Each pump station contains two two-horsepower grinder pumps that alternate and allow for switching in case one of the pumps fail. Both of these pump stations pump to a 3,000-gallon, in-ground septic tank. The system also has a 1,100-gallon dosing siphon tank with twin siphons, a distribution box and sixteen 90-foot drain lines in a drain field located near the picnic area's new restroom building.
- Museum system: a 3000-gallon septic tank and a distribution box with three 100-foot drain lines in the drain field.
- Tent/trailer campground sewer system: a 3000-gallon septic tank and a distribution box with twelve 180-foot drain lines in the drain field.
- East District office system: a 1000-gallon septic tank and a distribution box with two 80-foot drain lines located behind the East District office.
- Park office: a 1000-gallon septic tank and a distribution box with two 50-foot drain lines located in the woods beside the office.
- Personnel barracks: a 1000-gallon septic tank and distribution box with two 80-foot lines located in the woods behind the building.
- Maintenance/shop building: a 1000-gallon septic tank and a distribution box with one 25-foot drain line and one 75-foot line located behind the building.

- Ranger residence #1 (321 Park Entrance Road): a 1000-gallon septic tank and a distribution box with three 75-foot drain lines located in the woods in front of the house.
- Ranger residence #2 (460 Park Road): a 1000-gallon septic tank and distribution box with three 50-foot drain lines located in the back yard.
- Ranger residence # 3 (443 Park Road): a 1000-gallon septic tank and distribution box with two 60-foot drain lines located in the back yard.
- Superintendent's residence (430 Park Road): a 1000-gallon septic tank and distribution box with four 80-foot drain lines located in the back yard. The system was completed in 2003.
- Crumpler house: the septic tanks will be crushed and filled when this building is demolished. The demolition has been approved. The septic system has not been used for approximately 15 years.
- Group campground system: Installed in late 2004, the pump and haul system has two 500-gallon holding tanks which will be pumped out by a septic vendor as required. Demolition of the old existing pit privies will take place soon.

### Current Conditions

Overall, the sewer systems are in good shape. A capital improvement project completed in 1992 repaired the majority of the sewer systems within the park. All the tanks were pumped out at that time. In 1998, the bathhouse system was replaced with a new system. One pump station was installed 1998 and the other in 2004. None of the sewer systems require water quality permits.

### Repair Needs

The museum septic tank riser needs to be brought up to grade. The East District office and new superintendent's residence septic tanks need risers on them. There is a need for a sewer connection for a campground host site in the campground. All tanks need to be pumped out on a three to five year cycle. Water usage records are now being kept for the bathhouse and new toilet building. The pump station at the bathhouse and new toilet building needs to be maintained at least on a weekly basis. Septic tank filters need to be installed at the new bathhouse and campground systems.

The sewer systems are required to be operated by a licensed sub-surface operator, and some training is needed to meet this requirement. At present, the park does not have a licensed operator. A maintenance mechanic is familiar with the operation of the pump stations, and the park has qualified local vendors who will be contacted in the event of a failure.

### Repair Costs

Tank pumping: 10 tanks at \$200 per tank = \$2000

Riser installation: 3 risers at \$300 each = \$600

Install a sewer line for campground hosts: 100 feet at \$20.00 per foot = \$2000

Monthly sewer maintenance contracts: \$150 per month  
Remove Crumpler Pond sewer system: To be determined

## **Water System**

### Description

The park is supplied water by the Wayne County Public Water System. The water piping is class 200 PVC piping of various sizes with valves at all service connections. There are approximately 3,650 feet of piping that runs from the main tie at the park gate to the service connections within the park. All major buildings have new piping that was replaced around 1989. In the early 1990s the park tied into the Wayne County Public Water System. The park gets up to 1.2 million gallons-a-year in return for leasing a well site to the county. The well is located at the front entrance to the park.

### Current Conditions

The main water lines are in good shape. The valves are in fair shape and need to be exercised on a routine schedule.

### Repair Needs

There are several interior feeder lines within the park that need to be replaced. A complete set of as-built drawings that show the correct waterline locations needs to be prepared. The metal 10,000-gallon water storage tank that is no longer used needs to be removed from the park, along with the water system treatment tanks and well at the park maintenance area. The well needs to be properly abandoned.

### Repair Costs

Water line replacement to the ranger residence and maintenance shop: 800 linear feet at \$10 per foot = \$8000.

Water tank removal of the 10,000-gallon storage tank: \$15,000.

Water treatment equipment removal and well abandonment: \$15,000

## **Electrical System**

### Description

Most of the park power is located underground and is supplied by Tri-County Electric Membership Corporation. Pad-mounted transformers are located at all major locations. A major upgrade of the overhead wires was completed in 1998.

### Current Conditions

Most of the electrical system was installed in the 1960s and is in fair shape. A major upgrade took place in 1998, and all primary overhead wiring is new.

#### Repair Needs and Costs

A study is needed to determine the cost for replacing the power lines. The park prefers that the power company retain ownership of the underground power lines.

### **Telephone System**

#### Description

The district office and park office phone system was upgraded in 1998. US Sprint provides a line for the fire and security system for the district office. BellSouth provides a line at the swim area. The telephone system is in good condition. No repairs are needed.

### **MAJOR CAPITAL IMPROVEMENT PROJECT PRIORITIES**

As a part of the general management plan process, proposed capital improvement projects at Cliffs of the Neuse State Park were carefully reviewed to determine if all projects were still needed and if changes to projects were desirable. In reviewing the proposed capital improvement projects, the general management plan evaluation team considered factors such as changes in environmental regulations, condition of facilities, natural heritage inventory, recreation demand, operational issues and needs, visitor safety considerations, State Parks Act mandates, and trends. Changes to the project scope were made to several of the proposed projects. One new project was proposed: the *Trail Improvement, Bridge, Drainage and Wayside Exhibits* project.

Once the existing projects were reviewed and project scopes revised where necessary, and the new project added, each project was then evaluated and ranked using the Division's Project Evaluation Program (PEP), thus creating a revised project priority list of capital improvement projects for Cliffs of the Neuse State Park, which is shown below. These projects were then combined with projects evaluated and ranked for other state park units, resulting in a priority list of capital improvement projects for the entire state parks system.

#### **Revised Project Priority List**

Rank	Project Title	*Score	Cost
1	Visitor's center/district office	698	\$3,459,207
2	Renovation of 3 ranger residences	651	233,518
3	Trail improvement, bridge, drainage, wayside exhibits	646	266,976
4	Picnic area renovations	635	482,650

5	Tent & trailer campground improvements	605	651,866
6	Museum renovations/classroom	579	673,270
7	Vehicular storage shed	558	276,815
8	Maintenance area renovations	535	214,747
9	Barracks renovations	523	<u>192,906</u>
Total:			\$6,451,955

*\*The score comes from the Division's Project Evaluation Program (PEP). The PEP uses an evaluation formula to rank projects that considers four factors: the objective of the project; the justification or urgency for funding; the estimated annual number of persons (visitors and/or employees) who are affected by the project; and the project's significance, ranging from local to national. The park superintendent, district superintendent, and division management evaluate projects. There are 15 objectives categorizing a project's purpose, and each project can have a primary and secondary objective.*

### **Capital Improvement Project Descriptions**

1. Visitor's Center/District Office: Build a new visitor's center facility with auditorium, exhibits, park and Eastern District office space, and convert the existing Eastern District office to a maintenance warehouse. The current office is not ADA compliant and does not meet standards. Utilities, signage, parking, and furniture and equipment are also included. The proposed visitor's center may be relocated to another site.
2. Renovation of Three Ranger Residences: The project scope was revised to delete the major electrical deficiencies that caused safety concerns: the work has been completed by the use of informal contracts. Some other minor work has also been undertaken by park staff and deleted from the project scope. The project will expand and renovate three residences to meet current health and safety standards.
3. Trail Improvements, Bridge, Drainage, Wayside Exhibits: This new project will construct a new trail to Crumpler Pond, repair the existing trails, design and construct a pedestrian bridge(s), reroute the parking lot drainage currently piped directly into the swim lake and create a sediment pond for the drainage water, and construct a roofed structure to house a 90-foot drilled core of the cliffs.
4. Picnic Area Renovations: Renovate the existing shelter, landscape to current health and safety standards, add electricity to shelter, and replace the tables and grills.
5. Tent and Trailer Campground Improvements: Improve the existing campsites by adding borders, tables and grills, add a sewer line for campground hosts, and replace the existing washhouse with a new facility, expected to cost \$300,000, that meets ADA requirements and better serves the public. The original project scope called for \$50,000 in renovations to the existing washhouse facility.

Because the existing washhouse is a concrete masonry unit structure, renovation to meet ADA guidelines would not be cost effective. A double vault Rom-Tech toilet (\$45,000) in the group campground was deleted from the project scope: it was recently constructed as a part of the contract to build a new restroom at the picnic area.

6. Museum Renovations/Classroom: Expand and renovate the museum building restrooms to meet current health and safety standards. After the proposed visitor's center is built, the museum will be converted to a classroom building, bathrooms renovated, and equipment and furniture added. If the visitor's center precedes this project, exhibits will be housed there and only limited exhibits will be needed for this facility.
7. Vehicular Storage Shed: A shed is needed to house trucks, materials, and equipment now exposed to the elements. Utilities, parking and equipment are also included.
8. Maintenance Area Improvements: Renovate existing maintenance buildings to current health and safety standards. Includes a roof on the pump house, a combustible storage building and repairs to the shop building.
9. Personnel Barracks: Expand the kitchen to add a lounge area and renovate the barracks to meet current health and safety standards. Staff disagreed on the merits of this project. Before it is funded, further study is needed to determine the demand for a barracks and the best use of this facility.

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